Center Independent Research & Development: GSFC IRAD

Frequency Diversity Technique for Space-borne Radar Doppler Measurements

Completed Technology Project (2012 - 2013)

Project Introduction

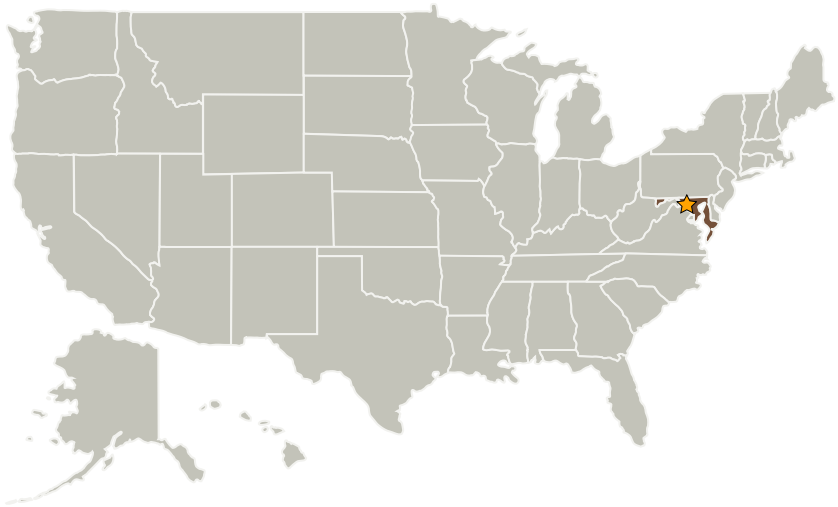
Doppler velocity measurement has been challenging for radars onboard fast moving platforms (such as spacecrafts) or radars with rapid scanning antennas due to the spacecraft ground speed or antenna motion. This proposed effort will focus on the development of a unique frequency diversity technique for extending the Doppler Nyquist range of remote sensing radars. Technology advance from this task has the potential to enable new science capability of Doppler radars.

Doppler measurements from a rapid moving platform, such as spacecraft, or radars using fast scanning antennas have been especially challenging due to spectrum broadening and rapid decorrelation between successive pulses.

Anticipated Benefits

N/A

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Goddard Space Flight Center(GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland

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Primary U.S. Work Locations

Maryland

Project Website:

http://sciences.gsfc.nasa.gov/sed/

Organizational Responsibility

Responsible Mission Directorate:

Mission Support Directorate (MSD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Center Independent Research & Development: GSFC IRAD

Project Management

Program Manager:

Peter M Hughes

Project Manager:

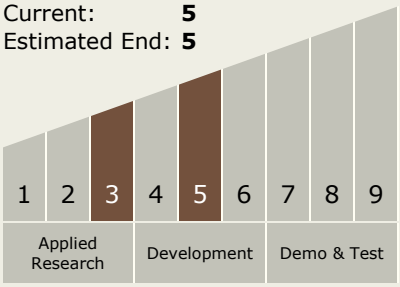
Terence A Doiron

Principal Investigator:

Lihua Li

Technology Maturity (TRL)

Start: **3**
Current: **5**
Estimated End: **5**



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Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.1 Remote Sensing Instruments/Sensors
    - TX08.1.4 Microwave, Millimeter-, and Submillimeter-Waves